

NORTHERN TERRITORY NATURALIST



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THE NORTHERN TERRITORY FIELD NATURALIST CLUB
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P.O. BOX 39565 WINNELLIE N.T. 5789

Editorial

The spectacular photograph on the cover of this issue of the 'Northern Territory Naturalist' is a startling illustration of a reversal of our conventional notions of predator/prey relationship. The voracious insectivorous gecko *Hemidactylus* is itself devoured by an insect, albeit the equally voracious mantis. It is of course comparative size which has determined the outcome of the encounter between the gecko and mantis. A small mantis is eaten by a larger gecko and a smaller gecko by a larger mantis.

Gould's Monitor, the common goanna of the Northern Territory, is a relentless predator of almost any animal of suitable size to overpower and swallow. Snakes, including venomous snakes are a regular addition to it's diet, but Gould's Monitor is in turn eaten

by snakes. Some years ago I encountered a recently despatched King Brown Snake on the Stuart Highway near Tennant Creek. In delivering the coup de grace, an automobile had split open the snake's abdomen to reveal a recently swallowed juvenile Gould's Monitor, and protruding from the distended monitor was the tail of an adult Central Netted Dragon, almost as large as the monitor itself.

One generally regards frogs as inoffensive to all but soft-bodied insects, but I have watched a large Common Tree Frog consume a fully-grown mouse, and although frogs are a major food item of many snake species, the introduced Cane Toad of Queensland eats small snakes, along with other examples of our native fauna.



Letters to the Editor

Dear Sir,
A REQUEST FOR ASSISTANCE WITH . . .

A BIO-BIBLIOGRAPHY OF AUSTRALIAN ORNITHOLOGY: 1951-1975.

With the co-operation of people connected with Australian ornithology, I have been continuing the work commenced by the late H.M. Whittell in his, *The Literature of Australian Birds*, 1954, Paterson Brokensha Pty. Ltd., Perth; i.e. compiling biographies and bibliographies of all who have made a contribution to Australian ornithology.

(a) By taking up in 1951, where Major Whittell left off, and continuing to 1975, similar information covering 25 years will be added to our ornithological literature.

Many of you will know that this project has been in hand for some time, and much has already been accomplished.

Now, in order to see the work completed within a reasonable period, I have seen the need to seek assistance.

To facilitate this, I plan to separate the work into small sections. The division of labour is to take place in the following manner:

A person (or team if preferred) would record all of the articles that appear in a given publication and covering a specific period.

For example: *THE SUNBIRD* : 1970-1972

In this particular instance the job would require examining eight parts of that journal. A fairly easy task, but one of tremendous help in the long run. Just the occupation for a Winter's evening!

Standard index cards will be supplied to those willing to take part in the project, the uniform method of recording will be set out in a sample card, and every assistance will be given.

Occasionally articles on birds appear in out-of-the-way publications, and information regarding these will be greatly appreciated.

(b) Corrections and additions to, *THE LITERATURE OF AUSTRALIAN BIRDS* mentioned above.

Over the years, additional material and emendations that fall within the time spanned by Whittell, have come to light. These are being gathered into what will become a companion volume to Whittell's work. I would be grateful if anyone knowing of such additions or corrections could let me have them for inclusion in this collection. If we share our finds others can also benefit.

Needless to say due acknowledgement will be given to all who contribute in any way.

Discussion with those engaged in many facets of work with birds have indicated if such references were made available they would provide valuable information.

I look forward to hearing from interested members.

(Mrs.) Tess Kloot,
8/114 Shannon Street,
Box Hill North,
Victoria 3129.

Dear Sir,

I would like to reply to Keith Martin's letter in your No. 4 issue, concerning the Milkfish *Chanos chanos* at Valencia Island.

During my term at Coburg Peninsula as Ranger, these fish were a common site whilst on coastal patrol, behaving in exactly the manner you described, but usually, only during the "build up", when "glassy" seas are not uncommon.

I have particularly noted them behaving in this manner when we had what we called "red tides". Kilometers of pinkish oil slick like dust on the surface, which had the stench of rotting seaweed, and which I believe is actually seaweed spore.

Where the spore was thick, it was nothing to see a school of 100-200 fish actually mouthing the surface like carp in muddy water. However where the spore was dispersed and not readily recognisable, they would just swim with open mouths.

Whilst these slicks were long, they were never more than a kilometer wide, and usually only 100 metres or so. Therefore I

had dismissed the fact that they were gasping for air caused by oxygen depletion, as in the case in the proper red tides, as they could have easily avoided these slicks. Rather, I was positive that they were feeding on this spore, but could never entice one with a lure, or bait, to examine its gut contents. The only time I have ever seen them taken, is by the aboriginals with spears. On that instance, the fish were feeding on an incoming tide in a shallow dirty bay. With sporadic bursts, they would rocket through the shallows, their scythe like tails protruding above the surface. The aboriginal I was watching speared eight fish in half an hour.

I'd therefore, suggest Keith, that they may have been feeding on fine spore dust or minute plankton as you suggest. Next time try a bread crust on your hook, and bread burley. I've since found this works, but don't get too excited about the flesh flavour.

Bryan Walsh.
P.O. Box 344,
KATHERINE. 5780.
13.2.81

NOTES ON THE REPRODUCTIVE BIOLOGY OF THE PYGMY MULGA GOANNA *Varanus gilleni* LUCAS & FROST 1895

Graeme F. Gow
N.T. Museum of Arts & Sciences

This small arboreal species was first collected in 1894 during the famous Horn Expedition to Central Australia. Described from two specimens both taken from trees it was named after F.J. Gillen who was Chief Officer of the Alice Springs Telegraph Station.

Although occasionally displayed in zoo collections the first worker to publish on its biology was E.R. Pianka in the Western Australian Naturalist, Vol. II, No. 4 1969. Although he examined 104 specimens from Australian State Museum collections, the five female *V. gilleni* available to him did not contain large ovarian or oviducal eggs and reproductive data on this species is still scanty. On the 25th August 1973 the author received a gravid female collected by Mr Karl Roth of Alice Springs. The specimen was collected at 1600 hrs temperature 23° celsius, from under the bark of a Desert She-Oak Tree (*Casuarina decaisneana*).

The female was immediately placed in a small aquarium containing a layer of red desert sand and bark sheets for the animal to hide under. Over the next two weeks live food was offered on numerous occasions, but only in two separate instances a single adult Prickly Gecko (*Heteronotia binoei*) was taken.

On the 18th September the female became extremely active and gave indications that she was ready to lay by digging in several different areas of the aquarium floor. Regular observations throughout the day until 2300 hrs revealed that the laying site had not been selected. At 0700 hrs the following morning it was noticed that an excavation had been made under the water container. Upon lifting it carefully, four eggs (one immature) had

been deposited underneath. These were numbered, then removed and measured. Two measured 30mm x 18mm and the third 28mm x 18mm.

A shallow screw top perspex container with an aerated lid was filled to a depth of 50mm with a mixture of peat moss and fine river sand. Three indentations were made on the surface and an egg placed in each. The eggs were orientated exactly as laid and then covered with a thin layer of slightly moistened cotton wool.

The container, was placed in sunlight for half hour periods daily and the cotton wool remoistened when necessary. The eggs were inspected three times daily to check their progress and on the 29th December at 2355 hrs a very fine slit was noticed on the surface of one egg and at 0700 hrs the following morning the entire head of the hatchling broke through.

The remaining eggs showed no signs of creasing until the morning of 31st December and by 1700 hrs both heads had emerged from the eggs.

All three hatchlings took 24 hours to completely emerge from the eggs and appeared exhausted by the effort.

Once the entire head appeared from the egg slit, it would constantly turn from side to side, the tongue flickering throughout as the monitor began sensing its new environment. If anyone approached, the container, heads were completely retracted into the inside of the eggs. Eighteen hours after leaving the eggs all three hatchlings were exploring their new surroundings and fed immediately on juvenile scincid lizards (*Carlia gracilis*) and small grasshoppers.

The incubation periods in this instance were 103 and 104 days, or approximately 15 weeks.

The measurements of the hatchlings at birth were:

	No. 1	No. 2	No. 3
Total Length	134mm	138mm	135mm
Snout vent	61mm	64mm	62mm
Snout to ear	15mm	15mm	15mm
Snout to eye	8mm	8mm	8mm
Front leg	18mm	18mm	15mm
Back leg	20mm	21mm	21mm

Two further gravid specimens have since been examined by the author N.T.M. R0704 S.V. length 160mm contained 7 eggs and R1579 S.V. length 150mm 4 eggs.

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NOTE ON THE REPRODUCTIVE BIOLOGY OF THE RING-TAILED DRAGON

(*Chelosania brunnea*)

By R. Pengilley*

A gravid female of the Ring-tailed Dragon (*Chelosania brunnea*) was collected by G. Miles at Jabiru, N.T., on 7 August, 1975. On 13 August, 1975, six eggs were laid in sand at a depth of 14 cm. Five eggs were weighed and measured on 14 August, 1975; the sixth was preserved in 10% formalin. Since eight young hatched on 14 September, 1975 an additional three eggs must have been laid soon after 13 August. These eggs, however, were not weighed or measured.

The five eggs examined were creamish, elongated and distinctly rounded at each end. Mean weight, length and width of these five eggs, together with plus or minus twice the standard error of these parameters were, respectively: 1.7 ± 0.004 (range 1.6 - 1.8 g); 21.0 ± 0.18 (range 20.3 -

21.5 mm) and 12.1 ± 0.21 (range 11.8 - 12.9 mm).

The snout-vent length of the female was not recorded. However, her body weight after laying six eggs was 21.3 g.

Mean hatchling weight, snout-vent length and total tail length of eight hatchlings were, respectively; 1.48 ± 0.0008 (range 1.45 - 1.55 g); 39.3 ± 0.21 (range 38.5 - 40.0 mm); and 44.8 ± 1.18 (range 42.2 - 46.5 mm). Seven of the eight hatchlings had six dark bands on the tail, whilst the eighth had seven. On two of the seven hatchlings the sixth, or last, dark band was indistinct.

* Wildlife Research
Conservation Commission
P.O. Box 38496
Winnellie N.T.

DISCOVERY OF THE WESTERN CHESTNUT MOUSE *Pseudomys nanus* IN THE TANAMI DESERT

by D.F. Gibson and R.I. Southgate

During the course of regular surveys into the Tanami Desert we have frequently captured small mice which unhesitatingly, have been labelled *Pseudomys desertor* (desert mouse). In September of this year a male specimen twice the size of "normal" *Pseudomys desertor* was captured at Merrina Waterhole (18° 46', 131° 17') on Winnecke Creek. Its obvious size difference although overall morphological similarities necessitated a more thorough examination than usual. The result was discovery of the tropical grassland 'Top-End' western chestnut mouse, *Pseudomys nanus*, within the Tanami Desert. The similarity in appearance of *P. desertor* and *P. nanus* suggested to us that other specimens previously identified as *P. desertor* were misidentified and were, in fact, *P. nanus*. Further examination of specimens held at the Central Australian Museum in Alice Springs revealed *P. nanus* to occur as far south as Rabbit Flat (20° 47', 129° 28') in the southern Tanami, a range extension of the species south by several hundred kilometres.

Externally the 2 species of mice are similar in appearance particularly as both have an orange/yellow eye-ring which undoubtedly has been the main reason for confusion in the past. The eye-ring is

however, more conspicuous in *P. desertor* and the numerous guard hairs give this species a much more spiny appearance than is apparent with *P. nanus*. In addition, the belly fur of *P. nanus* and ventral surface of the tail are much lighter in colour. The tail of *P. desertor* appears "rougher" and darker in general.

Osteological characteristics of the skull will undisputedly separate out the 2 species. The palatal foramina of *P. desertor* is shorter in length than the complete length of the upper molar row. As well, rarely does the posterior end of the palatal foramina extend to the first molar tooth. By contrast, the palatal foramina of *P. nanus* is longer than the length of the molar row and frequently extends past the anterior end of the first molar. The structure of the first molar tooth can also be used as a diagnostic characteristic.

While collections of *P. nanus* have so far been limited, it appears that the species is an inhabitant of shrubby woodlands particularly along creeks and drainage lines. *Pseudomys desertor* on the other hand appears to be associated with mature spinifex vegetation and is less likely to occur in shrubby woodland when spinifex is absent.

NOTES ON THE BLACK-FOOTED TREE RAT IN A MODIFIED ENVIRONMENT

By John Wheeler

The Black-footed Tree Rat *Mesembriomys gouldii* is a large arboreal rodent confined to tropical Australia. Its range includes Melville Island, where observations were made on the natural history of this species.

This rodent has been found to occupy 5 out of the 27 buildings at Pickertaramoor settlement, Melville Island. The ceiling space is the area found to be usually utilised, but one was living in an old 20 litre container inside a shed. It appears *M. gouldii* is using all suitable available sites at Pickertaramoor as daytime shelter spots. This is, they act as a replacement for the native-vegetation shelters (e.g. tree hollows) which would have once occurred in the settlement area, although some native trees are still found throughout the grounds.

The source of these rats would be the native vegetation surrounding Pickertaramoor. Here the dominant vegetation type is *Eucalyptus* woodland or open forest (*Eucalyptus nesophila*, *E. Miniata*, including shrubby understory,) monsoonal vine thickets, and patches of *Callitrix*. Some of these areas may still be utilised by the rats occupying the buildings for feeding, etc. It is possible that *M. gouldii* may travel some distance along the ground to feeding sites as an individual has been observed at night in a flowering *Grevillea pteridiifolia* on the edge of the treeless plains, Melville Island. In this case it is possible that this rat may have travelled about 100 m (or more) from the nearest *Eucalyptus* trees to feed on the *Grevillea* flowers.

An unspecialised diet has been suggested for this species by Watts and Aslin (1981) and it seems likely that *M. gouldii* would utilise exotic foods at the

settlement such as those provided by fruit trees and through ground foraging of food scraps. This is indicated with the following observation at Pickertaramoor.

"At 2330 hours on 26 February 1981, drawn to the attention of a gnawing noise in an African Mahogany tree (*Khaya senegalen-sis*) one tree rat was observed moving up and down along the tops of the limbs. The source of the noise could not be located under the available light but with the aid of a torch beam placed in the direction of the sound it was possible to locate the second tree rat. In this case, it was holding a seed with its front feet and holding onto the branch with its hind feet. Its location was near the tree trunk on the first main branch at a height of 3.3 m above ground level. This tree had a height of 7.6 m and diameter at breast height of 13.0 cm. Soon after the light beam was placed on the tree rat it dropped the seed and moved up along the branch."

The seed was collected and identified as a peach seed (*Prunus sp.*). This seed would have been collected by the rat on the ground and taken up onto the tree branch for eating. Presumably, the kernel was the desired material. This behaviour probably represents some form of security feeding strategy. Feeding in a secure location has been suggested for other rodent species (e.g. Begg and Dunlop, 1980).

Watts and Aslin (1981) claim that no social groupings have been recorded for *M. gouldii* other than mother and young. The abovementioned observation is also interesting in relation to this aspect as both rats appeared to be mature animals.

At Pickertaramoor, this tree rat in its occupation of buildings has caused damage through its chewing of timber,

plastic electrical fittings, electric wires and telephone cables. It has also caused damage to seed, particularly that of *Gronophyllum ramsayi*, stored in plastic bags at the nursery.

The Northern Brush Tail Possum (*Tachosurus arnhemensis*) has also been found to occupy a ceiling at Pickertaramoor and been observed in flowering *Grevillea* shrubs at a similar time to *M. gouldii*.

It appears that the little known *M. gouldii* is present at Pickertaramoor in sufficient numbers to make it a suitable study site. For example, Figure 1. shows this rat in a stationary stance with a straight, white tipped tail. This probably represents some sort of display, however, behaviour of this nature could only be sorted out with further observations.

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* Conservation Commission of N.T.



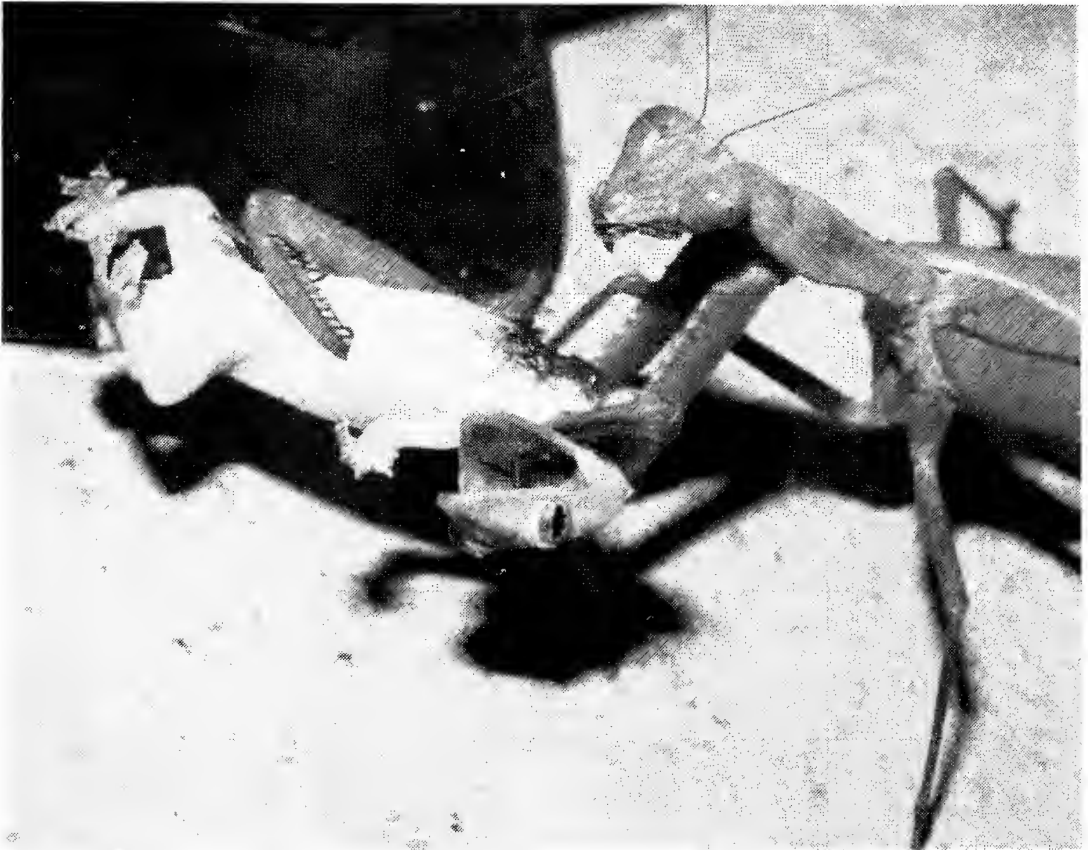
Fig. 1: *M. gouldii* which on this occasion shows a prominent, straight tail.

OBSERVATIONS OF PREDATOR/PREY RELATIONSHIPS BETWEEN PRAYING MANTIDS AND GECKOS

By Peter Wright*

There have been a number of reports of predation by praying mantids on vertebrates such as frogs, lizards and birds. Dr. Mike Ridpath of CSIRO Wildlife Research, Darwin, refers to these as well as describing his own observations of encounters between the large green mantid (*Hierdula wernerii*) and green tree frogs (*Litoria caerulea*) (Ridpath, 1977). He also reports two cases of the same species of mantid attacking brown honeyeaters (*Lichmera indistincta*).

My own observation of vertebrate predation by a mantid occurred on 4 April 1978, in the Narrows area of Darwin, when loud, agitated calls drew my attention to a struggle between a house gecko (*Hemidactylus frenatus*) and a large green mantid (presumed to be *H. wernerii*). This introduced gecko (Cogger, 1975) is a common resident of Darwin homes and is often found around external lights or on fly wire screens to which moths and other insects are



attracted.

In this case the gecko became the prey. Its body was firmly held by one of the mantid's spined forelegs, while the mantid slowly ate through the discarded tail held by the other foreleg. After approximately 20 minutes the tail, bones and all, had been eaten and the mantid, now using both forelegs, began on the right leg of the ensnared gecko. The gecko remained alive for some time until the mantid had eaten well into its body.

After approximately 90 minutes the mantid was observed to have discarded the remains of the body, comprising only head and spinal column, and this was found the following morning in the final process of being stripped by ants.

Two nights later another large green mantid (possibly the same individual) was observed under the same light, this time with a captured brown moth.

Since then I have witnessed several interactions between mantids and geckos, although none quite so grisly as the first. In one case another large green mantid was apparently unsuccessful in stalking geckos on a fly wire screen. On 6 May 1981 a small green mantid was observed on the outside wall of my home in Millner close to a number of geckos. Although much larger than the mantid the geckos, after an initial

investigation of the insect, appeared disturbed (waving tail) and hurriedly retreated. The mantid was observed for 10 minutes during which time it moved within striking distance of geckos several times without being attacked, causing the geckos to withdraw instead.

It is hard not to have a grudging admiration for these deadly, voracious insects which can successfully take on the formidable insectivorous gecko.

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- * Environment Unit, Conservation Commission of the Northern Territory.

CAVE DWELLING IN THE MOLOSSID BAT

Tadarida jobensis colonicus

* R.J. Begg and J.L. McKean

As part of a flora and fauna survey of the Katherine Gorge National Park, three specimens of the Northern Mastiff-bat (*Tadarida jobensis colonicus*) were collected from a small cave beneath a rock ledge overhanging the Katherine River (A.M.G. 5369-264162).

The crack was about 500mm long and 50mm wide. The overhang was 20m wide and extended 14m under the cliff which forms one side of the main Gorge. At the time of collection (16 October 1981) the cave was 5m above the water line, but is completely flooded in the wet season.

Two males and one female (pregnant-one foetus) were collected from the cave, along with two male Large-footed Myotis (*Myotis adversus*).

The form *colonicus* has not previously been reported as roosting in caves (Hamilton - Smith, 1964, 1966) although extra - limital subspecies of *T. jobensis* are known to (cf. Troughton, 1931). As discussed by Hamilton - Smith (1966), the habit of Molossidae of squeezing into narrow cracks may be the reason for cave-dwelling individuals escaping attention until now.

Acknowledgements: Thanks are due to Mr. A. Woods and T. Barlett for their assistance in the field.

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- * Conservation Commission of the Northern Territory
P.O. Box 38496,
Winnellie, N.T. 5789.

THE STATUS OF CUCKOOS *CUCULIDAE* IN THE DARWIN AREA

NORTHERN TERRITORY, 1974 - 1980

By H.A.F. Thompson.

Introduction

This is the second of a series of papers summarising data obtained by a number of observers around the Sanderson Sewage Ponds and other sites in the Darwin area. (For the first, see McKean, 1981). Although the observations have been of a casual nature and are subject to observer bias, they have been made with reasonable regularity from 1974 to 1980. This includes the period preceeding cyclone Tracy on the night of 24-25 December 1974. As a whole, these observations from Sanderson comprise the only such body of phenological data relating to birds from the immediate Darwin area.

The Cuculidae present special problems. All but one of the Australian species are brood-parasitic and, as a result, breeding data is difficult to obtain. In the case of the Darwin area, we may lack confirmed breeding records of some common species.

In addition, there are identification problems with some species.

We have recorded nine species from the Darwin area.

Methods

Counts were conducted at a number of sites around Sanderson Sewage Ponds, Darwin, from 1974 to 1980. The study continues. As a rule, each site was visited at least once a month.

The data from all sites is summarised in a single histogram for each species, giving the total estimated number of individuals per calendar month, totalled for all seven years. For example, this means that the July entry on the histogram represents a total for all the July estimates from 1974 to 1980 added together.

Oriental Cuckoo (*Cuculus saturatus*)

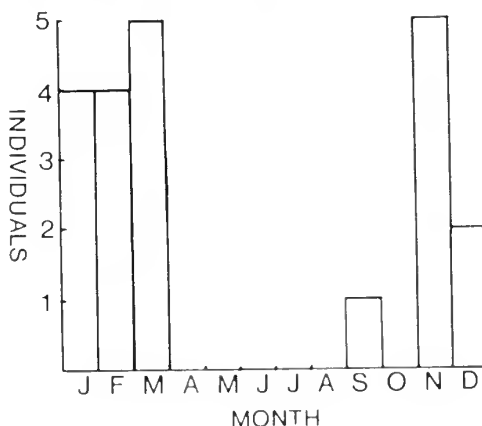


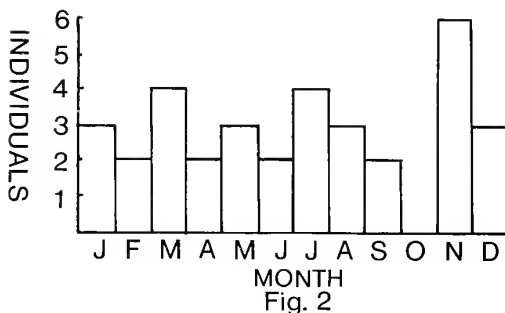
Fig. 1

The erratic pattern suggest that we have inadequate data for this species which does not breed in Australia. It is silent when it is here and may easily be overlooked.

The Oriental Cuckoo is widespread as a breeding species from central Russia, east and north into Japan, China, Taiwan and the Himalayan region. It winters in southern India, Philippines, parts of Indonesia, Papua New Guinea and northern Australia (from Condon, 1975).

The September record is probably atypical. Although the data is scanty, my own personal records from outside the study area and those of J.L. McKean (pers. comm) suggests peaks at either end of north Australian wet season, that is in November and March. Although the species clearly winters in the Darwin area, perhaps there is also migratory passage coinciding with the spring and autumn movements of the northern hemisphere.

Pallid Cuckoo (*Cuculus pallidus*)



This is another uneven histogram, suggesting inadequate data, although the species has frequently been identified in the Darwin area by its distinctive call.

In spite of this, I know only of two positive breeding records for the Top End of the Northern Territory. J.L. McKean and J.A. Estbergs saw Bar-breasted Honeyeater (*Ramsayornis fasciatus*) feeding a recently fledged bird between the West and South Alligator Rivers on 10 June 1979. P.F. Rowen and myself saw a well-grown fledgling being fed by a White-gaped Honeyeater (*Meliphaga unicolor*) in a Darwin garden on 18 November 1980. Adult birds were noisy and active in that area, close to the Palmerston Golf Course throughout much of November 1980.

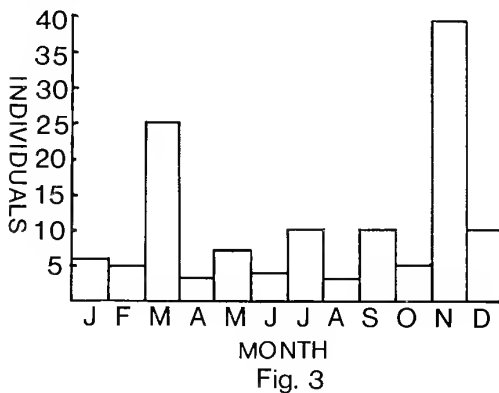
Most Most of the records for this species are from the identification of its calls only so that the two peak months of March and November represent its most vocal periods. As the species is apparently present throughout the year, this suggests that either the bird has a 'double' breeding season, co-inciding with the rather stormy weather at either end of the wet season or that during these months, sexually active birds migrate through the area.

Condon (1975) describes the species as migrating to New Guinea, the Aru Islands, the Lesser Sundas and Moluccas. The populations breeding in southern Australia are largely if not totally migratory, according to Pizzey's summary (1980).

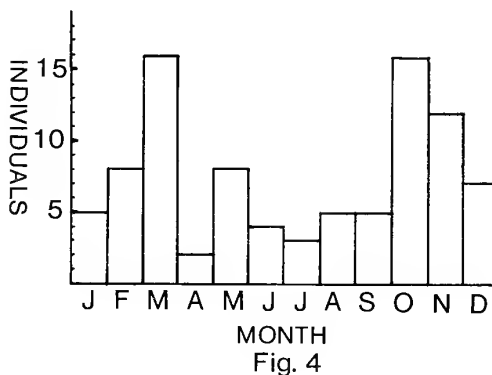
W.R. Mason (pers. comm.) has provided me with nine breeding records of this species. All involve eggs in the nest of the host species. Two records are dated 30 November and 27 December; of the others, six are in the period from 17 February to 22 March, the last being in mid-April, the date unspecified. Although the data is scanty, it seems to bear out the double peak on the histogram.

The host-species involved were: from 17 February to mid-April, Bar-breasted Honeyeater (*Ramsayornis fasciatus*), 5, Rufous-banded Honeyeater (*Conopophila albogularis*), 2; 30 November, Broad-billed Flycatcher (*Myiagra ruficollis*), 1, and 27 December, Paperbark Flycatcher (*M. nana*), 1. Perhaps the Brush Cuckoo parasitizes different hosts at different times of the year.

Brush Cuckoo (*Cuculus variolosus*)



Little Bronze-cuckoo (*Chrysococcyx minutillus*)



Crawford (1972), writing of the Darwin area, describes this species as moderately common in monsoon forest and mangroves and notes that it is more often heard than seen. He gives a record of courtship feeding on 12 December 1970. Like the Brush Cuckoo, it is most commonly identified by call and the two peaks on the histogram, in March and October suggest again that it is either most territorial at these times or that sexually active birds are passing through.

However, unlike the Brush Cuckoo, there is no evidence that the Little Bronze-cuckoo is migratory. The species is widespread in northern Australia, south-east Asia and the New Guinea sub-region.

J.L. McKean (pers. comm.) found a fresh egg in the nest of Large-billed Gerygone (*Gerygone magnirostris*) at Buffalo Creek, within the study area, on 10 October 1972. G. Ragless (per McKean) found eggs in the nests of the same species at Buffalo creek and Ludmilla Creek in Darwin on 8 October 1972.

W.R. Mason (pers. comm.) has provided me with fourteen breeding records of this species from the Darwin area. Twelve involve the Large-billed Gerygone as host species; with the other two, the host in one case was the Green-backed Gerygone (*G. chloronota*) and the other the Mangrove Gerygone (*G. levigaster*). McKean has also seen a juvenile being fed by a Dusky Gerygone (*G. tenebrosa*) at Derby in the Kimberley district of W.A. This species does not occur in the N.T. Mason and McKean (pers. comm.) have pointed out that the Large-billed Gerygone nests almost throughout the year and that it has a rather conspicuous nest. They have suggested that the long breeding season may help to offset losses through parasitism by Little Bronze-cuckoos.

A month-by-month analysis of the breeding records of Little Bronze-cuckoo again tends to support the histogram.

March and October had five records each; February, April, July, September, November and December had one record each. We have no records for the other months. (Mason's record involving Green-

backed Warblers is undated and omitted from this analysis; Ragless' record of 'nest' - i.e. plural - is read as two.)

The Little Bronze-cuckoo seems to be little known. Slater (1970) describes its voice as "apparently not recorded". Pizzey describes its calls as similar to those of the Rufous Bronze-cuckoo (*Chrysococcyx rufus*), a species from Queensland and southern Papua New Guinea that does not occur in the N.T.

In my experience, the species has two main calls, a descending sequence of usually five notes and a rather protracted, insect-like trill on a single pitch. The descending call can usually be distinguished from the similar call of the Horsfield's Bronze-cuckoo (*Chrysococcyx basalis*) by having five notes only but this is not always reliable. *C. basalis* usually gives seven or more.

In addition to its parasitism of *Gerygone* sp., I have also seen a female being mobbed by a Paperbark Flycatcher (*Myiophobus* sp.).

Horsfield's Bronze-cuckoo (*Chrysococcyx basalis*)

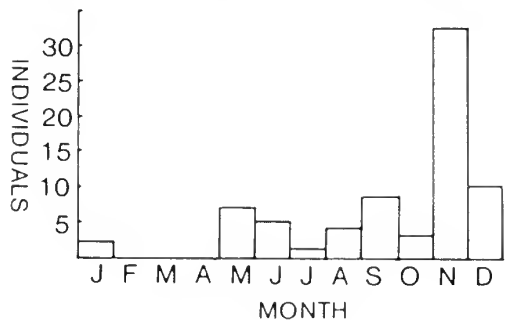


Fig. 5

This is a migratory species in Australia. Condon states that it is a partial migrant in the warmer parts of the country but a total migrant in the cooler areas of the south-east. In our records, it is probably identified more frequently by sight as opposed to call only, than most other cuckoos. There are several records of immature birds. This species is less frequently heard than *C. minutillus*.

The November peak is caused by an abnormal number of records of the species during November 1980. This month was quite atypical, compared with November of other years. The absence of the species for three months of the year, February, March and April, with only a low figure for January, suggests that the species breeds outside the area. Storrr (1979) records breeding north to the McArthur, implying that it does not breed in the Top End. The Darwin population may well be largely if not entirely migratory and non-breeding.

I know of no positive breeding record for the Darwin area. McKean (1980) has an interesting record of a bird on migration at West Island, Ashmore Reef off the W.A. coast at 12°. 15'. S, 122°. 58'. E., on 9 November 1979.

Black-eared Cuckoo (*Chrysococcyx osculans*)

There are two records from the study area of this species which breeds in the inland of Australia. It may be a partial migrant as it is known from the Moluccas and New Guinea (Condon).

The two records from the study area are both in June and both refer to single birds only; 15 June 1977 (H.A.F. Thompson) and 4 June 1979 (J.L. McKean and J.A. Estbergs.)

We have four other records from the Top End: a single bird at Knuckey's Lagoon near Darwin, 26 July 1974 (J.L. McKean); 1 at Humpty Doo, 10 June 1979 (A.L. Hertog); 1 near the West Alligator River on the Arnhem Highway, 22 June 1979 (J.A. Estbergs) and 1 in forest between Berrimah and Cameron's Beach near Darwin, 3 October 1980 (J.L. McKean).

Indian Koel (*Eudynamys scolopacea*)

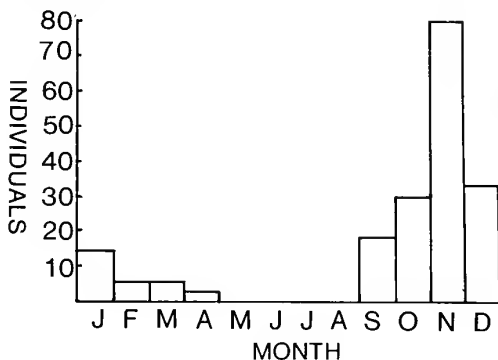


Fig. 6

The Indian Koel is an obvious migrant in much of northern and eastern Australia. In Darwin, it is largely absent during the dry season; the November peak on the histogram co-incides with its most vocal period. The highest single month was November 1974; the total of 56 observations for that month has not been matched. The species evidently suffered from the destruction of its monsoon and rainforest habitat during cyclone Tracy. This included the total destruction of some pockets of this habitat near Sanderson itself and others outside the study area, such as at Casuarina Beach.

In spite of this, it is quite adaptable and a suburban bird in parts of Darwin, such as Nightcliff, where mature native figs (*Ficus* sp.) remain in the gardens and streets as relicts of the former rainforest. Although it is a large and conspicuously coloured species, it is secretive and easily overlooked when not calling.

Although there are few confirmed breeding records, other species clearly recognise the Indian Koel as a threat and mob it. I have a personal record of a full-grown immature being attended by Helmeted Friarbird (*Philemon buceroides*)

near Buffalo Creek on 15 January 1978. A.L. Hertog and the writer saw a female being chased by a Helmeted Friarbird near Buffalo Creek on 29 October 1977. On 15 January 1978, I saw a male perching quite openly in suburban Nightcliff although it was being mobbed by Blue-faced Honeyeater (*Entomyzon cyanotis*) and Green Figbird (*Sphecotheres viridis*).

Boekel (1980) records a pair of Little Friarbirds (*Philemon citreogularis*) feeding a fledgling Koel near Victoria River Downs station. McKean (pers. comm.) records the dissection of a female collected near Berry Springs on 31 October 1978. He noted that the oviduct of the bird was convoluted and found three distinctly enlarged oocytes. He commented: "... obviously a breeding bird."

I witnessed the nuptial display of the species near Brinkin, Darwin, on 12 November 1978.

The diagram (fig. 7) shows a fully grown immature Koel and is based on my field sketch of the bird at Buffalo Creek on 15 January 1978. Although the plumage is described briefly in most standard works, I know of no illustration of it. It is distinct from

that of the adult female in the following respects:

1. The adult female has a complete black cap and marked moustachial stripe, with no supercilium ('eyebrow'). This immature showed a broad whitish supercilium, with black only on the 'top' of the head. The moustachial stripe was obscure.
2. The adult female has the upperparts blackish with whitish markings. This includes the tail. the immature had rich tawny upperparts with black markings, including the tail.
3. Underparts of the immature were off-white with a few crescentic dark markings on the breast. (see below).

McKean (pers. comm.) has examined the Australian museum specimens of this species, including immatures and warns that there is wide variation in this plumage.

However, a thorough knowledge of the immature plumage of this species is essential in assessing possible records of the next species, the Long-tailed Cuckoo (*Eudynamis taitensis*).



HT 1/82

Fig. 7
IMMATURE INDIAN KOEL

Long-tailed Cuckoo (*Eudynamys taitensis*).

(Note: the inclusion of this species in the account does not mean I endorse the following as confirmed records.)

The Long-tailed Cuckoo breeds in New Zealand and migrates northwards to Papua and eastwards into the Pacific. Slater (loc. cit.) includes it because it occurs on migration on Norfolk and Lord Howe Islands. There is a record of a bird on Cato Island in the south-west Coral Sea, on 28 November 1961. (Hindwood et al., 1963.)

It is an unlikely vagrant in the Darwin area and more likely, for geographical reason, to occur on the coast of Queensland.

L. Potts (per J.L. McKean) has adequately documented a sighting near Buffalo Creek on 27 May 1980 but it remains unconfirmed. A previous 'square-brackets' record from Maningrida is on file with the Bird Observers' Club.

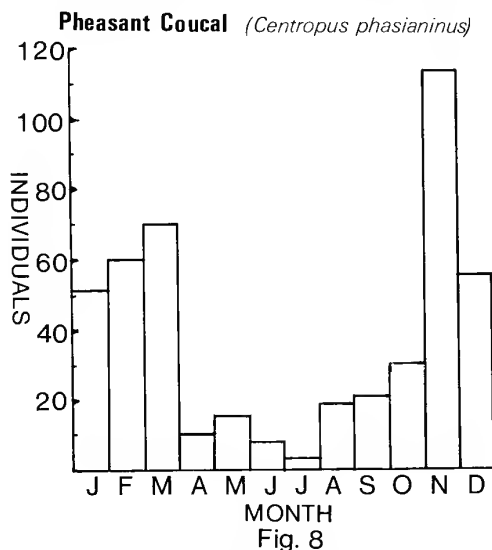
The Long-tailed Cuckoo has some similarities with the immature Koel but the most marked distinction is that it has streaks, not barring, on the underparts. Local observers should be aware of the differences.

Channel-billed Cuckoo (*Scythrops novaehollandiae*)

Within the study period, there were only three records of this species from the area, two in April 1974 (J.L. McKean and H.A.F. Thompson) and one in October 1980 (H.A.F. Thompson). However there are three recent records from March 1981.

It is a migratory species and seems to be much less common in the N.T. than it is in northern Queensland. There are occasional dry season records, a period when the species is normally absent from the Darwin area. I found it quite common at Scotts Creek, east of Humpty Doo on 25-26 July 1981. A.L. Hertog recorded a single bird near Kapalga on 4 August 1980 and 22 July 1981 in the Kapalga area, east of Darwin.

The main host species seems to be the Torresian Crow (*Corvus orru*). A solitary bird at Cameron's Beach on 12 November 1978 was being pursued by a Torresian Crow (J.L. McKean and H.A.F. Thompson) and Boekel (1980) recorded a large fledgling being fed by the same species in the Victoria River Downs station area. M. Reed (pers. comm. has recorded the same from Katherine.



This is the most conspicuous member of the family, being readily both seen and heard.. Crawford suggested that the species undertakes some seasonal movements because it is little observed during the dry season when the controlled burning should make it easy to see. Birds in August and September generally lack the black plumage on the head and underparts; this is attained patchily by the end of the year.

The November peak on the histogram represents the period when the species is most vocal and demonstrative. There are a few confirmed breeding records from the wet season. Building probably starts in November when the birds are noisy; I saw an adult carrying material at Kahlin in Darwin on 1 November 1980. I found a young bird, unable to fly, near Robin Falls in the Adelaide River district on 9 April 1977, probably a late date.

Acknowledgements

I am grateful to the following people for the use of their unpublished records: J.A. Estbergs, A.L. Hertog, L. Potts, W.R. Mason, J.L. McKean, G. Ragless, M. Reed and P.F. Rowen.

J.L. McKean of the Northern Territory Conservation Commission assisted with references and read the drafts of this paper.

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DISCOVERY OF A RUFIOUS NIGHT HERON ROOKERY IN THE NORTHERN TERRITORY

by Richard W. Braithwaite* & Johnny A Estbergs*

Rufous Night Herons (*Nycticorax caledonicus*) are common birds throughout Australia. Although immature birds have been frequently recorded in the Northern Territory (eg. Sedgwick, 1947), to our knowledge, no rookeries have been recorded for this area.

A large rookery of Rufous Night Herons was discovered in rainforest north of Mt. Hooper near the mouth of the South Alligator River. The vegetation is relatively simple structurally with the canopy stratum at 15 metres with a projected cover of 68% and a ground stratum at one metre varying between 4 and 26% projected cover. 46 species of plants were recorded on the rainforest site which was on well-drained calcareous sandy soil.

The rookery is not visible from the air as the nests are generally in the lower canopy and obscured by foliage from above. The rookery was about 400 by 200 metres and it is estimated that as many as 2000 birds were nesting.

On the evenings of March 17 and 18, 1981, when we visited the site, large numbers of birds were seen flying east. From our vantage point to the south-east of the rookery, all birds were flying in the one direction; suggesting they were feeding some distance from the rookery.

At the time of our visit, the nests mostly contained half-grown young. There were also small numbers of birds on eggs and a few large feathered chicks. On two occasions individuals were seen flying with nesting materials. Thus our visit appeared to coincide with the middle of the nesting season. During an earlier visit on

December 8 and 9, 1980, the area was not recognisable as a rookery. Most nests from the previous year had fallen apart and no Night-Herons were present. These observations concur with those of Frith (1976) that rufous (Nankeen) Night-Herons breed in the summer wet season in the tropical north. Unlike many rookeries, there were no other species of Herons using the rookery.

As this species is likely to be very sensitive to human disturbance, it is fortunate that the site is rather inaccessible. Because of a thick fringe of mangroves, the site is inaccessible by sea and its position is so far from roads of any description that land access is extremely difficult. Consequently it is hoped the site will continue to experience minimal disturbance for the foreseeable future.

These observations were made with the financial assistance of the Australian National Parks and Wildlife Service through the Kakadu Fauna Survey Consultancy Agreements.

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* CSIRO Division of Wildlife Research,
PMB 44,
Winnellie, N.T. 5789

A CITRINE WAGTAIL

(*Motacilla citreola*)

SIGHTING FROM ARNHEM LAND, N.T.

by John L. McKean

On 27 December 1981 Richard Woods, Glen Ingram, Pamela Grice and I were searching for Yellow Chats (*Epithanura crocea*) on the South Alligator River flood plain about 0.5km south of the Arnhem Highway, N.T. As we strolled through a peninsula of short grass along the edge of an *Eurychorda* dominated marsh, a *Motacilla* wagtail was disturbed from under a sedge tussock. Its call on flushing was different enough from that of a Yellow Wagtail (*M. flava*) to alert Woods and myself to pay keen attention to its features through binoculars as it ascended, still calling, into the air. It landed on the other side of the swamp, but several minutes later flew back calling, high over the top of us. Despite a diligent search for the bird, later that day and during the next, by ourselves and others, it was not re-located.

Our composite description is as follows. Call 'zee-ee-eet', shriller than that of the Yellow Wagtail (McKean, Ingram and Woods) and the phrases were considered shorter (Woods, Ingram). The calls were totally unlike those of the Grey Wagtail (*cinerea*) or the Pied Wagtail (*alba*). McKean has had extensive experience with Yellow and Grey Wagtails in Indonesia and Northern Australia, while Woods, a citizen of Northern Ireland, has had extensive experience of the Yellow, Grey and Pied Wagtails in Europe. The colour of the back, rump and mantle was concolorous and darker than that of a Yellow Wagtail and was

described as grey or dark grey brown. Due to our preoccupation with the ventral surface of the bird, wing bars were not looked for (McKean and Woods). The breast was of white below with a greyish longitudinal patch on the left flank (Woods) and a broken row of greyish spots across the chest (McKean). A superciliary stripe was noted (McKean), and outmost remiges were white (McKean and Woods). The tail was not noticeably long as in the Grey Wagtail and seemed to us approximately the same length as that of the Yellow Wagtail.

On the basis of the criteria advanced by Svensson (1977) the bird seems to be a first year Citrine or Yellow-headed Wagtail.

David Eades (pers. comm.) has, however, advised us that some of the identification characters given by Svensson have been queried by British bird watchers. In the event of any further advance in knowledge as to identification criteria for Citrine Wagtails our sighting would merit re-examination.

The first and only previous sight record of a Citrine Wagtail in Australia occurred during July 1962 in the vicinity of Botany Bay, in the southern metropolitan area of Sydney.

The bird, an adult male, was present in the area for at least three days (McGill, 1963).

The distribution and migratory patterns of the various subspecies of Citrine Wagtails are also discussed by McGill (loc. cit) and thus do not warrant repeating here.

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AN AUSTRALIAN RECORD OF THE STILT SANDPIPER

Micropalama himantopus

by John L. McKean*, A.L. Hertog* and
N Marr**

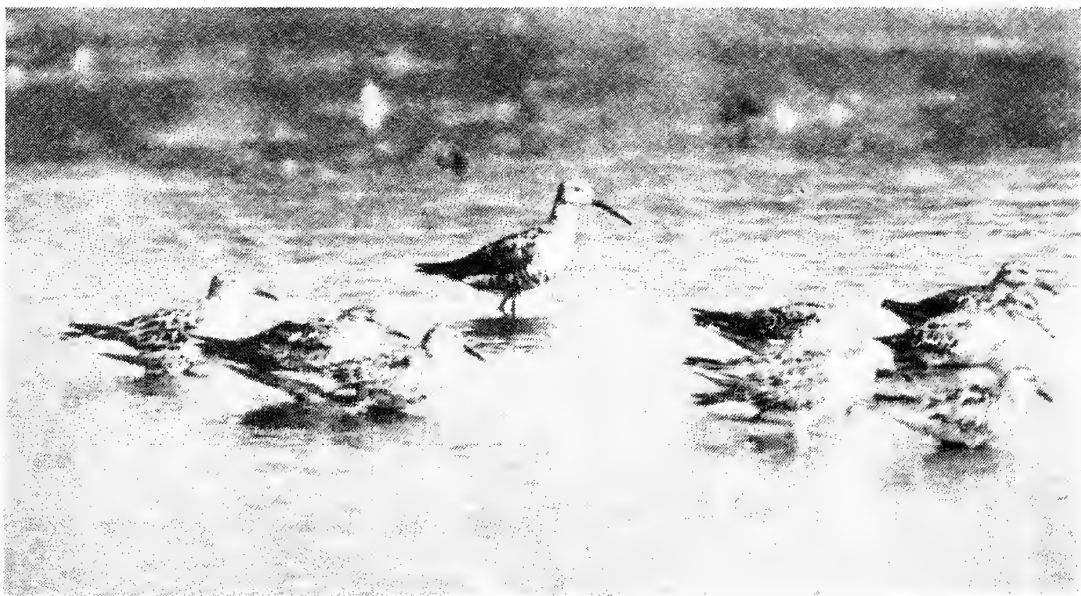
On 30 August, 1980 at 0730 hours while carrying out a bird census at the Sanderson sewerage Ponds, Darwin, we located a Stilt Sandpiper *Micropalama himantopus* in partial nuptial plumage on the edge of a small brackish pond. Curlew sandpipers *Calidris ferruginea* and a Black-tailed Godwit *Limosa limosa* were available for comparison. McKean's field discription at the time follows:

A slender wader with yellowish green long legs standing noticeably higher than the Curlew Sandpipers but shorter than the Black-tailed Godwit. Bill blackish, about double the lenght of the head, longer than those of the Curlew Sandpipers, down curved towards the tip. Dark brown crown. Mantle greyish with many of the minor wing-coverts and a patch of the scapular feathers blackish. The irregular distribution of the

dark feathers indicates a change from nuptial to eclipse plumage. Under parts whitish with some vertical striping on sides of throat, barring across the chest with traces on the flanks. The undertail coverts and vent were well marked with bars, again obviously the remains of nuptial plumage.

When flushed half an hour later the white rump with dark end of upper tail and the lack of a white wing stripe were seen to advantage. Hertog glimpsed the underwing in flight and considered it probably barred.

McKean, Hertog and H.A.F. Thompson found the Stilt Sandpiper at the same pond at 1630 hours on the same day. All the identification points previously noted were rechecked and confirmed and Thompson succeeded in obtaining a number of



photographs of it. The bird was seen in the same locality again on the 31st August, 1980 by Rita Cullerton, Hertog, McKean and Thompson. Hertog and Thompson succeeding in obtaining more photographs. It was seen at the same time locality on 1 September, 1980 by Johnny Estbergs and McKean.

Palmer(1967) gives the breeding distribution as across North America from north-east Alaska to Hudson Bay and counter clockwise in tundra zone around that bay at least as far as James Bay. The Stilt Sandpiper migrates through North America to its winter range in Central and South America, reaching as far south as Uruguay and Central Argentina. The species has occurred as a straggler in western Alaska, Sweden and Britain, but not previously in the Australasian region.

Autumnal migration(Northern hemisphere) apparently takes place in two waves, the first comprising breeding adults and beginning about mid-August. Conjecture as to the route taken by the Darwin vagrant seems pointless.

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* J.L. McKean and A.L. Hertog,
C.S.I.R.O., Division of Wildlife Research
P.M. Bag 44, Winnellie N.T. 5789

** Mrs. N. Marr,
C/- School of the Air,
Derby, W.A. 6728

BOOK REVIEWS

HANDLIST OF BIRDS IN NEW SOUTH WALES

By Allan K. Morris, A.R. McGill and Glenn Holmes.

Published by N.S.W. Field Ornithologists Club, and available to Darwin members through the N.T.F.N.C. or from the N.S.W. F.O.C., C/- 225 Kissing Point Road, Turramura, N.S.W. 2074, for \$7.50 (post and packing 70 cents per copy extra).

Arnold McGill's 'Handlist of the Birds of New South Wales' (1960) has been long out of print and the last 20 years have seen a flurry of ornithological activity enabling this much needed present publication to be much broader than a simple revision. The work is more than just a list of the birds recorded in New South Wales. Each of the 529 species treated has its status in N.S.W. described which includes a summary of the data available on occurrence, abundance, movements, distribution, habitat preferences and breeding season (egg laying

dates given). I was unable to fault the information given on any of the species I checked.

I am particularly pleased to see the authors have not seen fit to always follow the R.A.O.U.'s mandates on scientific and 'common' names such as the nauseating Thick-knee. However, while there may be some merit in considering *Pardalotus striatus* an incipient species, separation of the forms *ornatus*, *substriatus* and *melanocephalus* at the full level is quite ridiculous! This does not really detract in any way from the real worth of this most valuable reference works on the birds of New South Wales.

I thoroughly recommend it to anyone whose interests in birds lie beyond our N.T. boundaries; and buy it now, before it goes out of print.

J.L. McKEAN

HAWKS IN FOCUS

By Jack and Lindsay Cupper.

Copies available from Jaclin Enterprises,
P.O. Box 348, Merbein, Victoria, 3505
at \$29.20 posted.

In 1974, Jack and Lindsay Cupper set out to photograph Australia's 24 raptors at the nest, a task I thought nigh on impossible. Achieve it they did, and the spectacular set of still and movie photography that resulted will be a delight to all of us for years to come.

Hawks in Focus is not only a medium to publish a selection of their colour photographs, it is a fine book written in a most readable style giving an account of their trials and tribulations, methods and equipment but most importantly an account of the birds themselves.

To achieve their aims the Cuppers travelled in excess of 350,000 km and sat for countless hours in tiny hides at heights up to thirty metres in extremes of heat and cold. Five portable five-sectioned towers costing \$3,000 each were built and used in the course of the project. This massive

investment in time, effort and money has given us the finest set of Australian raptor photographs ever published.

The text concerning the birds is not the usual rehash from the literature but original observations all made by the Cuppers. We learn much concerning the role of the adults at the nest and of the incubation and nestling stages. Some bizarre happenings such as the adoption of nestling Kestrels by Black-breasted Buzzards and the hybridization of Brown and White Goshawks are described in separate chapters. The nocturnal nature of the Letter-winged Kite is fully confirmed and the first in depth studies of nesting Grey Falcons and Red Goshawks are made.

I thoroughly enjoyed reading this book and consider it a must for all ornithologists and bird watchers; in fact, it is quite suitable for anyone generally interested in wildlife. Considering the great number of coloured reproductions, the price is very moderate.

JOHN L. McKEAN

THE 1982 NORTHERN TERRITORY NATURALIST

Advice to Contributors:

Contributions to the N.T. Naturalist need not be members of the N.T.F.N.C., although all members are urged to contribute. Contributions may take one of the following forms:

1. Letter to the Editor

A letter should be a short comment on a previous publication in the NT. NATURALIST, a comment on an issue of topical interest in natural history, or a brief report of a field trip. Letters may be handwritten provided they are well presented. Only one copy of a letter is required.

2. Notes

If you have made a series of observations (for example, on the behaviour of a bird or other animal) or have notes something new or unusual in the field, then this is the place to report your findings. Contributions should be in order of 200 - 500 words and provided with a title.

3. Articles

An article should run to a maximum of about 1500 words (four to five double-spaced typed, A4 pages) and deal with a topic in the natural sciences. It should be written in a manner intelligible to readers without a specialist knowledge of the subject. Articles should be appropriately illustrated by clear, black ink graphs, diagrams or photographs.

4. Research Papers

Longer research papers will be considered. A paper should be an original scientific communication and be fully referenced.

5. Special Contributions

Feature articles, cover designs, photographs suitable for publication, drawings and reports on field trips are welcome. Contact the editor if you have any innovative ideas.

GENERAL

Manuscripts must be submitted in duplicate, typed on one side of the page only, double-spaced with a forty millimetre margin. The Editor will be pleased to give intending authors further guidance on the preparation of manuscripts.

journal of northern territory field naturalists club

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